

**What is claimed is:**

**[Claim 1]** 1. An optical interference color display, comprising:

a transparent substrate;

a plurality of first electrodes on the transparent substrate;

a patterned support layer on the transparent substrate, wherein the patterned support layer is between the first electrodes;

a plurality of optical films on the first electrodes;

a plurality of second electrode on the first electrodes, wherein the second electrodes are supported by the patterned support layer and that there is an air gap between the second electrodes and the respective first electrodes; and

an optical diffusion layer on the second electrodes facing the respective surfaces of the first electrodes, wherein an air gap is formed between the optical diffusion layer and the first electrodes.

**[Claim 2]** 2. The color display of claim 1, wherein the optical diffusion layer is supported through the patterned support layer.

**[Claim 3]** 3. The color display of claim 1, wherein the optical diffusion layer further includes:

a third film over the first electrodes and supported by the patterned support layer; and

a fourth film over the third film, wherein the interface between the third film and the fourth film forms a dispersive surface.

**[Claim 4]** 4. The color display of claim 3, wherein the third film is fabricated using a material including indium–tin–oxide and the fourth film is fabricated using a material including silicon nitride or silicon oxide.

**[Claim 5]** 5. The color display of claim 1, wherein the first electrodes are transparent electrode and that the first electrodes are fabricated using a material including indium–tin–oxide.

**[Claim 6]** 6. The color display of claim 1, wherein the second electrodes are metallic electrodes and that the second electrodes are fabricated using a

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material selected from a group consisting of molybdenum, molybdenum alloy, aluminum, aluminum alloy, chromium or a combination of them.

[Claim 7] 7. The color display of claim 1, wherein the transparent substrate includes a glass substrate or a plastic substrate.

[Claim 8] 8. The color display of claim 1, wherein each optical film includes:

at least a first dielectric film; and

at least a second dielectric film, wherein the second dielectric film and the second dielectric film are alternately stacked over each other and that the second dielectric film has a dielectric constant different from the first dielectric film.